**JS**

1. Introducing DHTML
2. Introducing JavaScript,
3. Client Side benefits of using JavaScript
4. Embedding JavaScript in an HTML page
5. Using Variables
6. Using Operators
7. Working withControl Flow statements
8. Working with functions
9. Handling Events
10. Using Arrays
11. Creatingobjects in JavaScript.
12. **Introducing DHTML**
* HTML- To define the content of web pages.
* CSS- To specify the layout of web pages
* JavaScript- To program the behavior of web pages.
* Dynamic HTML(DHTML):

 DHTML= HTML+ CSS+ JAVA SCRIPT

* We can enhance the web page by adding more dynamism and interactivity.
1. **Introducing Javascript**
* JavaScript is an interpreted, client side and object oriented scripting language.
* We can embed java script into an html document by using
* **<script>...........</script>**
* **<script>** tags can be placed in either **body or in head**.
* When you want the java script to run while the web page is **loading**, place the <script> tag in **body** part.
* When you want the script to run only when the **user performs an action**, such as clicking a link, place the <script> tag in **head** part.
1. **Client Side benefits of using JavaScript**
* Java Script is a client side scripting.
* The web browser executes the client side scripting that resides at the users computer.
* The browser receives the page sent by the server and executes client side scripting.

Differences between Client Side Scripting and Server Side Scripting

|  |  |
| --- | --- |
|  **Client Side Scripting** |  **Server Side Scripting** |
| 1.It executes in the client side i.e., in browser | 1.It executes in the server side. |
| 2.It cant access the database. | 2.It can access the database. |
| 3.It cant access the file system in server. | 3. It can access the file systems in server. |
| 4.It is faster than server side scripting. | 4.It is slower compared with client side scripting. |
| 5.Eg:JavaScript, JScript | 5.Eg:Servlets, JSP, PHP, .NET |

**Uses of Javascript**

1. Validation- The main purpose of JavaScript is to validate web pages.

2.To reduce burden on the server.

3.To reduce network traffic

4.To minimize time.

**4) Embedding JavaScript in an HTML page (or)Types of javascipt**

1. Internal
2. External

**Internal Javascript**

<html>

<head>

</head>

<body bgcolor=“light blue">

 **<script type="text/ javascript" language="javascript">**

 **document.write("hai");**

 **</script>**

</body>

</html>

**External Javascript**

**first.js:**

 document.write(“hai hello”);

**.html:**

<html>

<head>

</head>

<body bgcolor=“silver">

 <script type="text/ javascript" language="javascript“ src=“first.js”>

</script>

</body>

</html**>**

**5) Using Varibales**

* Accepts any kind of data ( int / float/ string/char).
* Default value is Undefined.

 <html>

 <body>

 <script>

 var a;

 document.write(a);

 </script>

 </body>

 </html>

Example:<html>

<head></head>

<body>

 <script>

 var a=10;

 var b=20.5;

 var c="hai";

 var d='a';

 a="hello";

 document.write(a+"<br>");

 document.write(b);

 document.write(c);

 document.write(d);

 </script>

</body>

</html>

**6) Operators**

* Arithmetic Operators
* Logical Operators
* Bitwise Operators
* Assignment Operators

**7) Control Flow Statements**

* If
* If-else
* Else- if Ladder
* Switch case

**If-else**

<html>

<body>

 <script>

 var a=10;

 **if**(a%2==0)

 {

 document.write(a+"is even number");

 }

 **else**

 {

 document.write(a+"is odd number");

 }

 </script>

</body>

</html>

**Switch-case**

<html>

<body>

 <script>

 var num=parseInt(prompt("Enter number"));

 var div=parseInt(prompt("Enter number"));

 var rem=num%div;

 switch(rem)

 {

 case 0:document.write("zero");break;

 case 1:document.write("one");break;

 case 2:document.write("two");break;

 case 3:document.write("three");break;

 case 4:document.write("four");break;

 case 5:document.write("five");break;

 case 6:document.write("six");break;

 case 7:document.write("seven");break;

 case 8:document.write("eight");break;

 case 9:document.write("nine");break;

 default:document.write("wrong");break;

 }

 </script>

</body>

</html>

**Working With Loops**

* Allows to execute a particular group of statements repeatedly.
* The number of times the group of statements is executed depends on a particular condition that is Boolean Expression.

1.Using While Loop

2.Using Do-While Loop

3.Using For Loop

**While loop**

* The group of statements that is to be executed is specified after condition. The group of statements keeps on executing until the condition is false.

 <html>

 <body>

 <script>

 var a=1;

 while(a<=10)

 {

 document.write(a);

 a++;

 }

 </script></body></html>

**Do-While loop**

* The group of statements are executed at least once.

 <script>

 var a=1;

 do{

 document.write(a);

 a++;

 } while(a<=10);

 </script>

**For loop**

* The for loop allows to execute block of statements for a pre determined number of times. The condition of for loop is placed at the beginning of the loop.

 <script>

 var i;

 for(i=0;i<=10;i++)

 document.write(i);

 </script>

**8) Functions**

* In java script, each user defined function must be started with a keyword **“function”.**

 <html>

 <body>

 <script>

 function func(a,b,c)

 {

 var sum;

 sum=a+b+c;

 document.write(sum);

 }

 document.write(“The function is to be called here”);

 func(10,30,40);

 </script>

 </body>

 </html>

Example

* **Java Script program to find factorial using recursion:**

 <html>

 <body>

 <script>

 function fact(a)

 {

 if(a==0||a==1)

 return 1;

 else

 return (a\*fact(a-1));

 }

 document.write("The factorial is");

 var a=fact(5);

 document.write(a);

 </script>

 </body>

 </html>

**9) Event Handling In JavaScript**

* Events refers to action performed on web page by user.
* Event Handler is a function that handles particular event.

**Onload event:** occurs while loading the page

<html>

<head>

 <script type="text/javascript" language="javascript">

 function myfunc()

 {

 alert("Welcome");

 }

 </script>

</head>

<body **onload="myfunc()"**>

</body>

</html>

**Onclick Event:**

<html>

<head></head>

<body bgcolor="silver">

 <form>

 <input type="text" id="field"><br><br>

 <button

 **onclick="alert('Hi'+document.getElementById('field'). value)"**>Click</button>

 </form>

</body>

</html>

**3.Onmouseover Event:**

<html>

<head>

 <script type="text/javascript" language="javascript">

 function mouovr()

 {

 alert("Welcome to WT");

 }

 </script>

</head>

<body>

 <h1 **onmouseover="mouovr()"**>HAI</h1>

</body>

</html>

**4.Onmouseout Event:**

<html>

<head>

 <script type="text/javascript" language="javascript">

 function mouout()

 {

 alert("Welcome to WT");

 }

 </script>

</head>

<body>

 <h1 **onmouseout="mouout()"**>HAI</h1>

</body>

</html>

**5.Onreset Event:**

<html>

<head>

 <script type="text/javascript" language="javascript">

 function rese()

 {

 alert("Are you sure to reset the data");

 }

 </script>

</head>

<body>

 <form **onreset="rese()"**>

 <input type="text" value="Enter the name"><br>

 <input type="reset" value="reset">

 </form>

</body>

</html>

**6.Onsubmit Event:**

<html>

<head>

 <script type="text/javascript" language="javascript">

 function subm()

 {

 alert("Are you sure to submit the data");

 }

 </script>

</head>

<body>

 <form **onsubmit="subm()"**>

 <input type="text" value="Enter the name"><br>

 <input type="submit" value="submit">

 </form>

</body>

</html>

**7.Onfocus Event:**

<html>

<body>

 Enter your name:<input type="text" **onfocus="onfoc(this)"**>

 <p>When iput field get focused, fucntion is executed</p>

 <script>

 function onfoc(x)

 {

 x.style.background="yellow";

 }

 </script>

</body>

</html>

**8.Onblur Event:**

<html>

<body>

 <p>When you enter the input field, a function is triggeredz</p>

 Enter your name:<input type="text" id=“myInput”onfocus="onfoc()" **onblur="onblu()"**>

 <script>

 function onfoc()

 {

 document.getElementById(“myInput”).style.background="yellow";

 }

 function onblu()

 {

 document.getElementById(“myInput”).style.background=“red";

 }

 </script>

</body>

</html>

**9.Using Arrays**

An array is a collection of elements, there are two ways to declare an array:

1.var array\_name= new Array(size);

Eg: var a=new array(3);

2.var arr\_name=new Array(initialization);

Eg:var b=new array(“hai”,”welcome”,”to”,”WT”).

**Methods**

* **concat()**: To concatenate the array elements
* **reverse()**:To reverse the elements.
* **sort()**: To sort the elements.
* **join()**: To join the elements.
* Join entity is treated as single entity whereas concat output is treated as multiple entities.

**EXAMPLE**

<html>

<body>

 <script>

 var i;

 var a=new Array(5);

 var b=new Array("hai",“welcome",”to”,“WT");

 a[0]=1;

 a[1]=2;

 a[2]=“hai";

 var n=a.length;

 for(i=0;i<n;i++)

 document.write(“Array is”+a[i]+"<br>");

 document.write(“Array length:"+a.length+"<br>");

 document.write(“Array concat:"+b.concat()+"<br>");

 document.write(“Array reverse:"+b.reverse()+"<br>");

 document.write(“Array sort:"+b.sort()+"<br>");

 document.write(“Array join:"+a.join());

 </script>

</body>

</html>

**10) Objects In JavaScript**

**Date object**

<html>

<head>

 <script>

 var dt=new Date();

 var year=dt.getFullYear();

 var date=dt.getDate();

 var day=dt.getDay();

 var month=dt.getMonth();

 </script>

</head>

<body>

 <script>

 document.write("Today is"+day+" "+date+" "+month+" "+year);

 document.write("<br>");

 document.write(dt.toString());

 </script>

</body>

</html>

**String Object**

<html>

<body>

 <script>

 var st="Welcome to Java Script Programming";

 var str="Happy Programming";

 document.write(st.length+"<br>");

 document.write(st.bold()+"<br>");

 document.write("The character at 11th position is"+st.charAt(11)+"<br>");

 document.write(st.concat(str)+"<br>");

 document.write(str.substring(0,17)+"<br>");

 document.write(st.toLowerCase()+"<br>");

 document.write(st.toUpperCase()+"<br>");

 if(st.match(/Java/))

 {

 document.write("The string contains Java"+"<br>");

 }

 if(str.search(/Happy/)!=-1)

 {

 document.write(str.replace(/Happy/,"Enjoy"));

 }

 </script>

</body>

</html>

**VALIDATIONS**

**E-MAIL VALIDATION**

<html>

<head>

<script>

function CheckEmail(inputtxt)

{

var ename= /\S+@\S+\.\S+/;

if(!(inputtxt.value.match(ename)))

{

alert('Invalid E-Mail Id ')

return false;

}

}

</script></head>

<body>

<form name="validation">

<input type="text" id="pass"><br>

<input type="submit" onclick=CheckEmail(document.getElementById('pass'))>

</form>

</body>

</html>

**PASSWORD VALIDATION**

<html>

<head>

<script>

function CheckPassword(inputtxt)

{

var paswd= /^(?=.\*\d)(?=.\*[a-z])(?=.\*[A-Z])(?=.\*[^a-zA-Z0-9])(?!.\*\s).{8,15}$/;

if(!(inputtxt.value.match(paswd)))

{

alert('password must contain atleast ')

}

if(inputtxt.value=="")

{

alert("Password Entry is Mandatory");

}

}

</script></head>

<body>

<form name="validation">

<input type="password" id="pass"><br>

<input type="submit" onclick=CheckPassword(document.getElementById('pass'))>

</form>

</body>

</html>

**PHONE VALIDATION**

<html>

<head>

<script>

function CheckPhone(inputtxt)

{

if(inputtxt.value.length<10)

{

alert("Invalid Phone Number");

}

var pname= /\d+/;

if(!(inputtxt.value.match(pname)))

{

alert('Phone NUmner must contain only digits ')

return false;

}

}

</script></head>

<body>

<form name="validation">

<input type="text" id="pass"><br>

<input type="submit" onclick=CheckPhone(document.getElementById('pass'))>

</form>

</body>

</html>

**USERNAME VALIDATION**
<html>

<head>

<script>

function CheckUname(inputtxt)

{

if(inputtxt.value=="")

{

alert("Name Entry is Mandatory");

}

var uname= /^[A-Za-z]+$/;

if(!(inputtxt.value.match(uname)))

{

alert('username must contain only characters ')

return false;

}

}

</script></head>

<body>

<form name="validation">

<input type="text" id="pass"><br>

<input type="submit" onclick=CheckUname(document.getElementById('pass'))>

</form>

</body>

</html>

**Important questions**

**Short answers**

1. **List two benefits of Javascript.**
* **JavaScript** is a client side language.
* **JavaScript** is an easy language to learn.
* **JavaScript** is comparatively fast for the end user.
* Extended functionality to web pages.
* No compilation needed.
* Easy to debug and test.
1. **Create an object called car with 3 attributes.**

**(or)**

**How to create Object in JavaScript?**

var car = {type:"Fiat", model:"500", color:"white"};

1. What is java script? Is Java and Java script the same?
2. How to embed java script in HTML.
3. What is the difference between DHTML and HTML?
4. Define an array in javascript.
5. Give one difference between while and do-while loop in Javascript.

**Long**

1. Create a HTML form with name, JNTUno, and e-mail along with submit button. Write javascript code to validate name, JNTUno and e-mail after clicking submit button.
2. What is an event? Explain briefly about the methods used for event handling with example.
3. Write a java script program to create registration page and also validate phone number.
4. Explain the characteristics of DHTML. ,date and string objects
5. Briefly explain java script Array objects.
6. Write a javascript function to find whether given number is a palindrome or not.
7. How do we embed javascript in html? Explain with an example.